

Barriers and opportunities for science-policy coordination in mid-Atlantic firescapes

Erica A.H. Smithwick*¹, Alan Taylor¹, Jesse Kreye², Katherine Zipp³,
Hong Wu⁴, Margot Kaye², Peter Newman⁵, Jeremy Webber⁶,
Joseph Battersby⁶, Scott Bearer⁷

¹ Department of Geography, The Pennsylvania State University (Penn State)

² Department of Ecosystem Science and Management, Penn State

³ Department of Agricultural Economics, Sociology, and Education, Penn State

⁴ Department of Landscape Architecture, Penn State

⁵ Department of Recreation, Parks, and Tourism Management, Penn State

⁶ New Jersey Forest Fire Service

⁷ Pennsylvania Game Commission

@ericasmithwick



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Changing fire policies in PA and NJ

New law means expanded use of prescribed burns

MICHELLE BRUNETTI POST Staff Writer Aug 29, 2018



Robert Williams, of Pine Creek Forestry, a certified forester with 40 years of experience, watches the progression of the fire during the controlled burn in the forest of Stockton University. Wednesday November 23, 2016. (Viviana Pernot / Staff Photographer)

VIVIANA PERNOT / STAFF PHOTOGRAPHER

Pennsylvania Passes Prescribed Burning Act

Many ecological communities in Pennsylvania (including native grasslands, oak-hickory forests, and serpentine barrens) depend on periodic fires to maintain their plant community composition and structure. In an even wider range of habitats, fire can be a tool to help combat invasion by non-native plant species. But conducting prescribed burns on private land has been a challenge in the state because of liability concerns. While other regions of the country have embraced the modern use of prescribed fire in managing habitats, Pennsylvania has long been stuck in the Smokey the Bear fire suppression mentality, with only a few organizations conducting regular prescribed burns on private land.



A prescribed burn in progress on a conservation property in New Jersey. Photo (c) 2009 Matthew Sarver

All that changed on July 14th 2009, when Pennsylvania Governor Ed Rendell signed House Bill 262, establishing the Prescribed Burning Practices Act. Introduced by Rep. Gary Haluska, the new law authorizes the state Department of Conservation and Natural Resources to establish standards for the conduct of prescribed burns in the state. The state will begin regulating burning practices by certifying burn managers and requiring state approval for burn plans. In exchange, the law limits the criminal and civil liability of landowners and burn managers, so long as the regulatory process is followed:

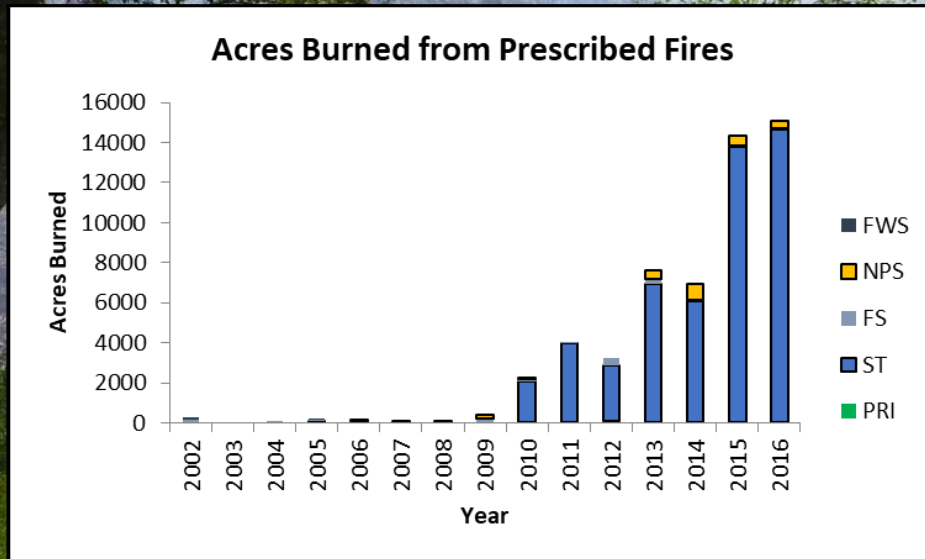
No owner of property who contracts with or authorizes a prescribed burn manager to conduct or permit a prescribed burn on the property pursuant to the requirements of this act shall be subject to civil or criminal penalty for damage or injury caused by the fire or resulting smoke, unless negligence is proven.

— PA House Bill 262

<http://matthewsarver.com/2009/07/pennsylvania-passes-prescribed-burning-act/>

https://www.pressofatlanticcity.com/news/breaking/new-law-means-expanded-use-of-prescribed-burns/article_955bc917-273b-5ca6-9f5e-4fb9a6ccc9fc.html

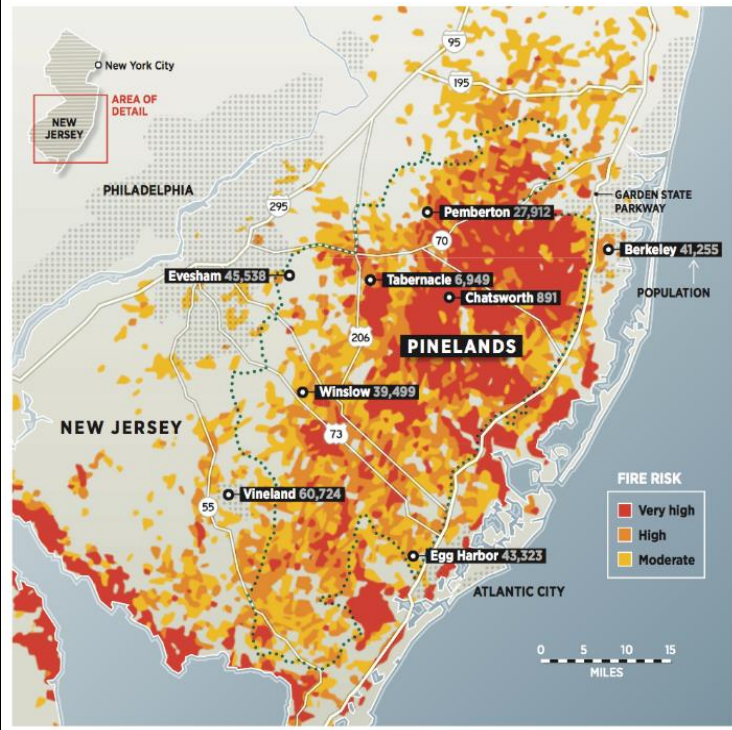
Rx Fire as new management tool



Different Burning Objectives

Will America's Worst Wildfire Disaster Happen in New Jersey?

Fires in the West dominate headlines, but the single most destructive blaze in U.S. history could occur in the Northeast



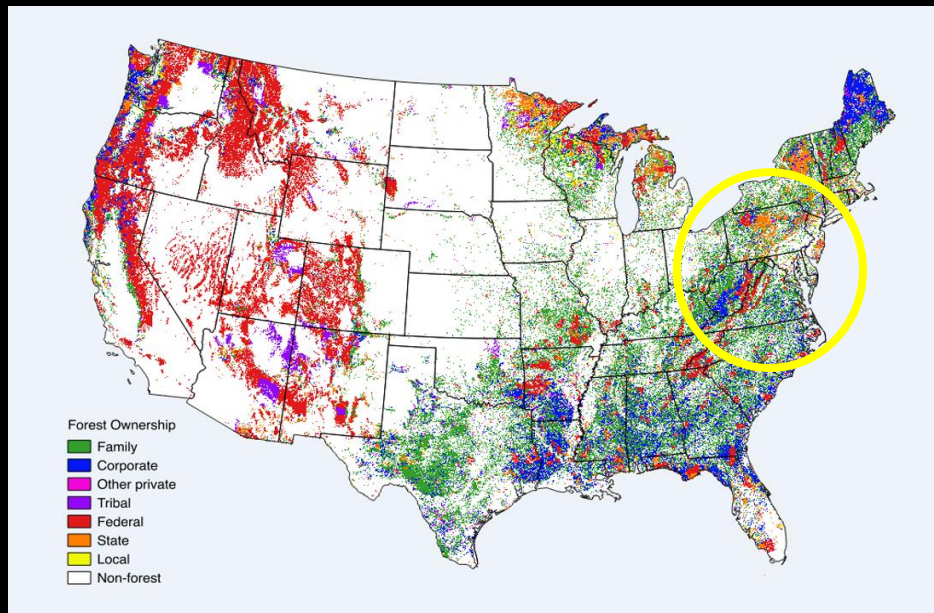
<https://www.rollingstone.com/politics/politics-news/will-americas-worst-wildfire-disaster-happen-in-new-jersey-34156/>

Different Burning Objectives



Mid-Atlantic Firescapes

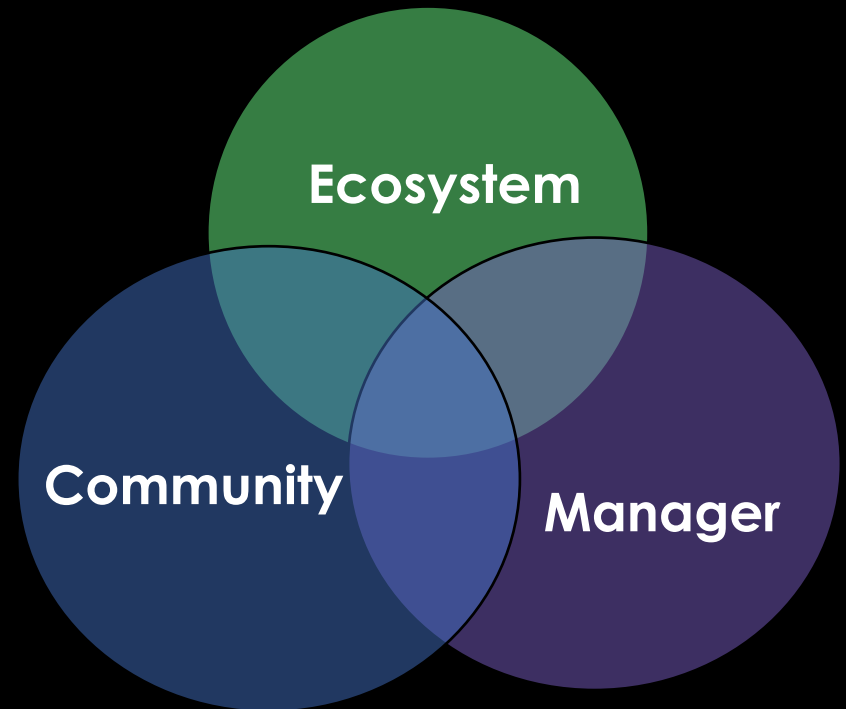
- Large Wildland-Urban Interface



- Mixed ownerships

Background: Project Objectives

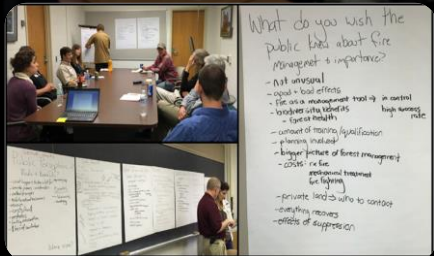
- Assess community perceptions about Rx fire risk and impacts
 - *What are community perceptions of the costs and benefits of the fire management?*
 - *What is the community “willingness to pay” for these benefits?*
- Determine the ecological effectiveness of Rx fires
 - *How does Rx fire influence the structure and composition of mixed oak forests in PA?*
 - *How does fire frequency influence the composition and structure of mixed-oak and pine forests in the mid-Atlantic U.S. over longer time periods (60 yrs)?*



We anticipate mismatches when (and where) social perceptions do not match ecological need or impact

Background: Methods

Focus groups with
managers and
FireWise groups



Recreational User
Surveys



Monitoring and
Modelling



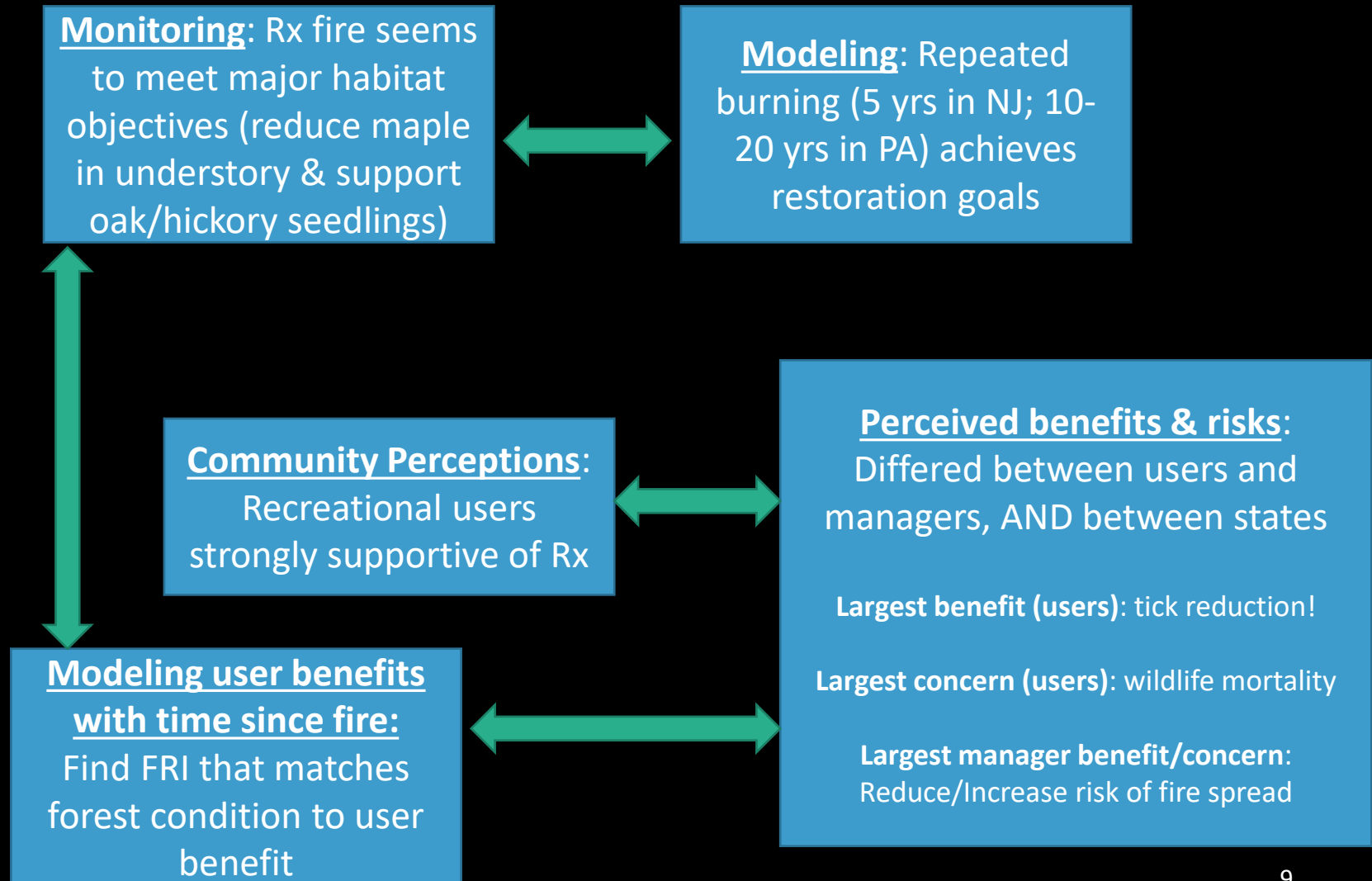
United States
Department of
Agriculture
Forest Service
Forest Management
Service Center
Fort Collins, CO
2002
Revised:
September, 2018

Essential FVS:
A User's Guide to the
Forest Vegetation Simulator

Gary E. Dixon



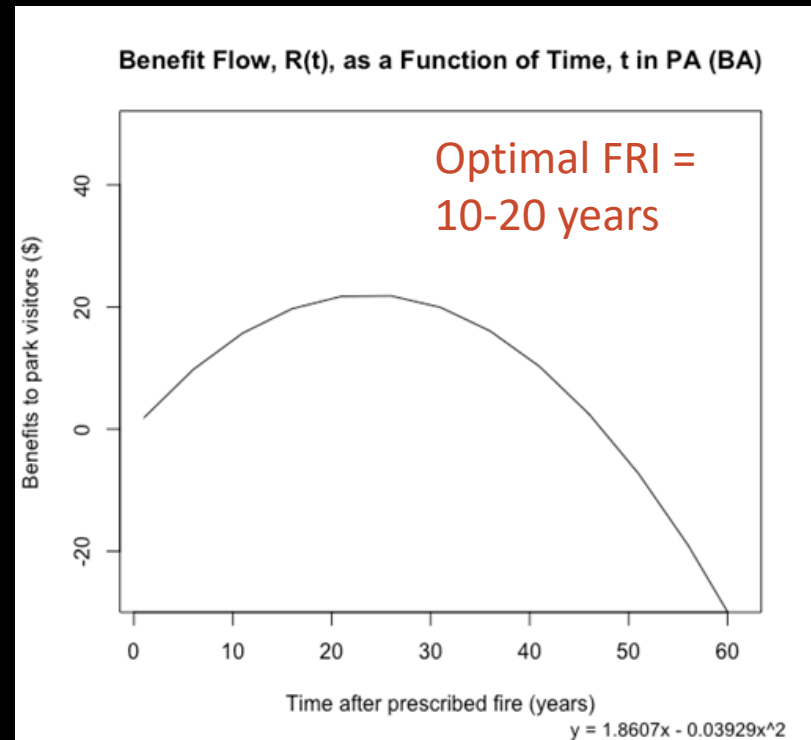
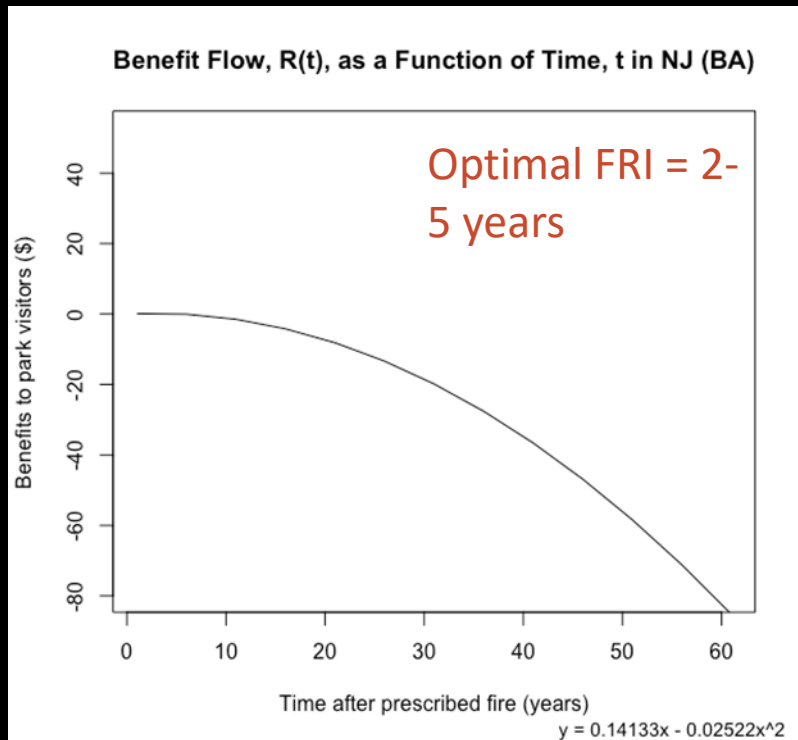
Results Overview



Matching perceived benefits to post-fire conditions

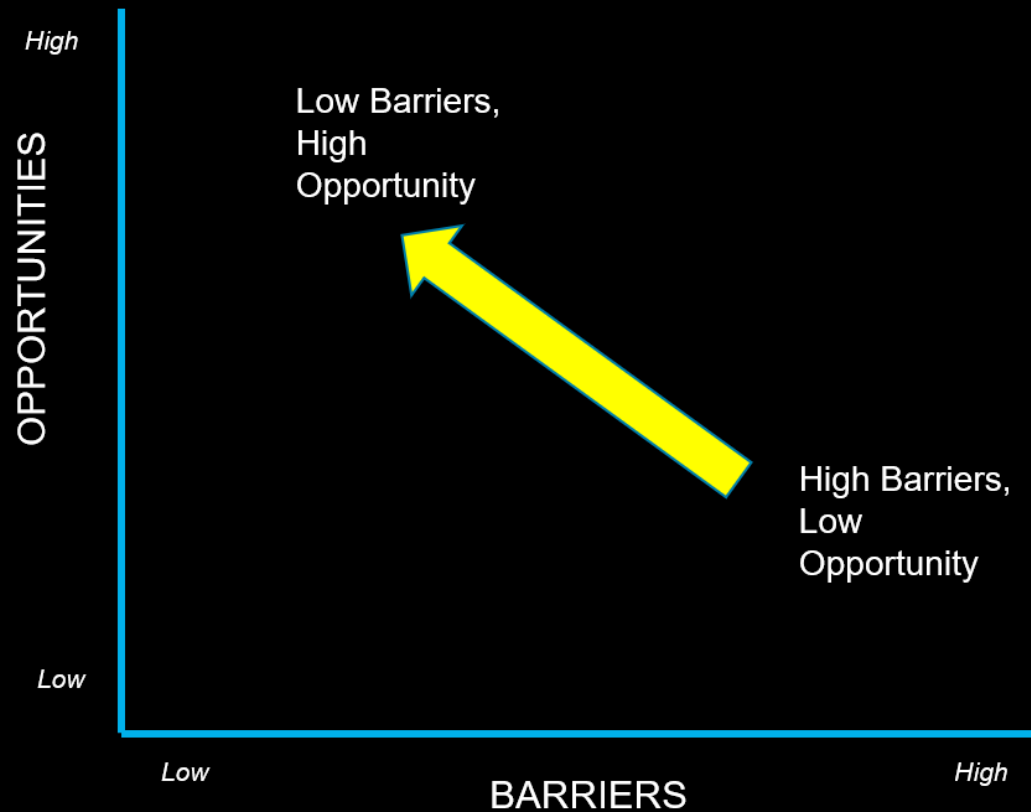
User Benefits: (increased) Visibility, (reduced) Hazard, (increased) Habitat quality

Forest conditions with time since fire: Canopy base height, Severe fire flame length, pine/oak basal area



Implications for policy

(1) Multi-level “Landscape burning”



Coordination of burning at landscape scales must consider trade-offs between barriers and opportunities...

...Barriers and Opportunities occur at multiple levels (landscape, community, individual)

"There are transportation, communication, AT&T cables, cellular sites...gas lines. Lines going from America to Europe underneath the ocean. [...] billions of dollars, and conceivably if we have a major fire or a series of major fires that can disrupt a lot of things, not just in New Jersey but probably throughout the whole country..."

Infrastructure

"I think what they think of when they think of fire is in California. They think of those major fires. What we try to distill in our conservation with them is that it doesn't take a major fire, an acre could destroy your house."

Mental image of the West

"We are running into more and more issues now as different groups moving into New Jersey, retirement people and/or other people that are not familiar with the burning."

"[other managers] are charged with pine snakes or raptors or bats or plants, and they are managing it by the square feet, not recognizing the landscape level approach [...] and they are inflexible with that."

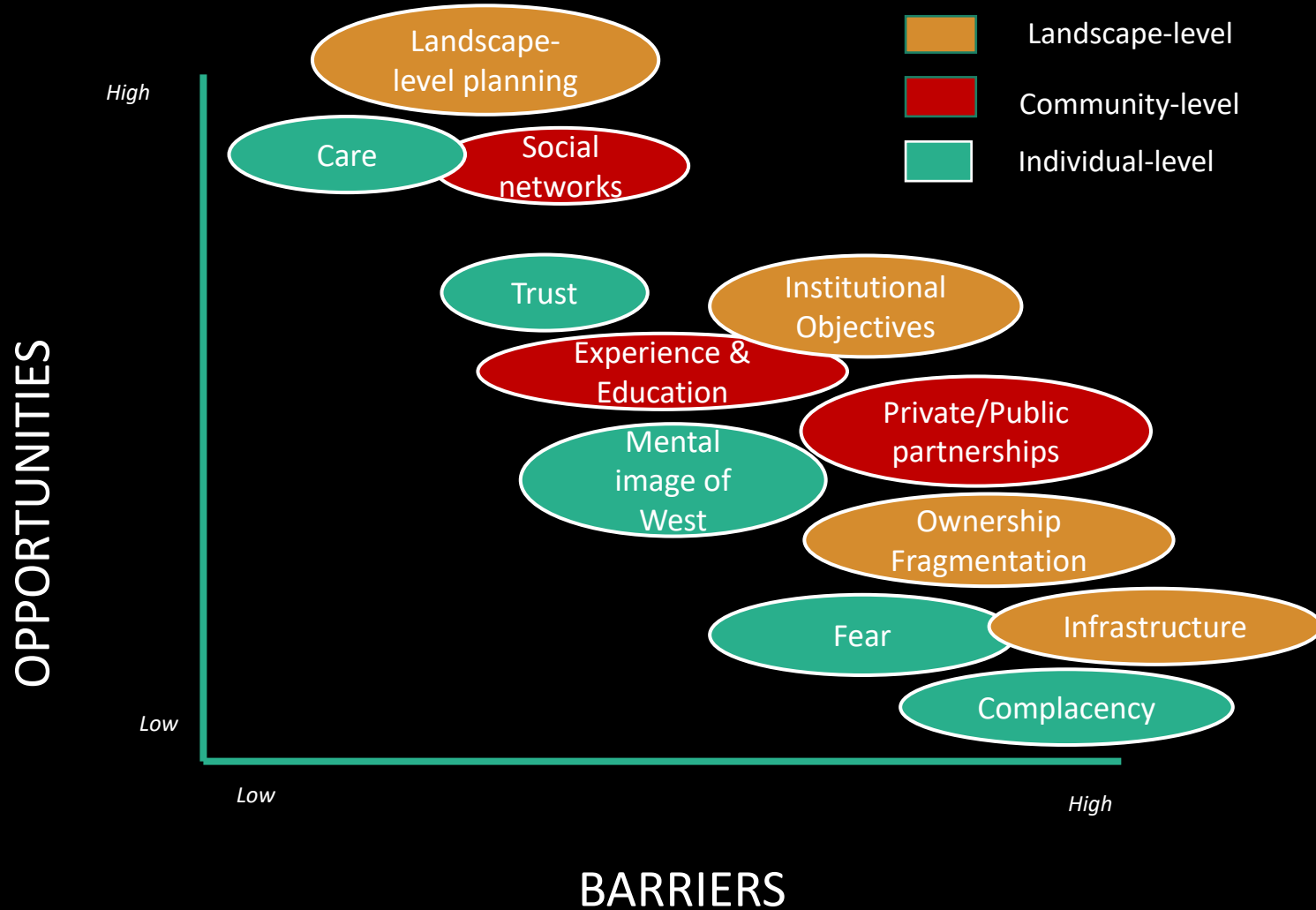
Institutional Objectives

Experience & Education

"if we save one home or saved one firefighter from having to go to that home, it's worth it, for that firefighter's life."

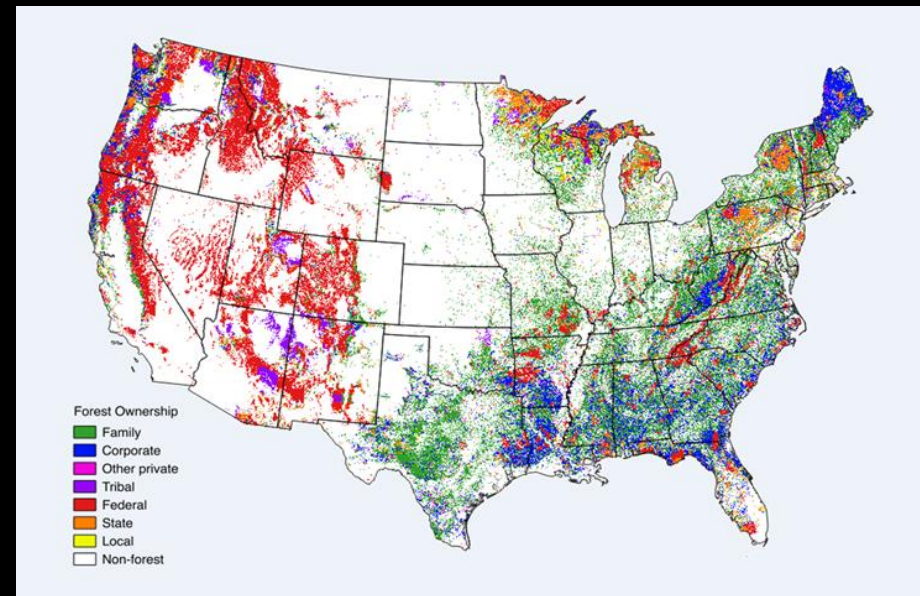
Care

Multi-level “Landscape Burning”



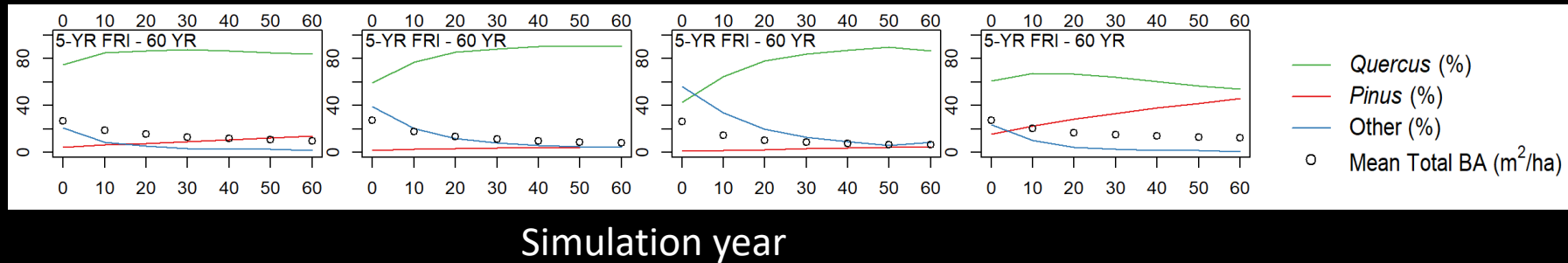
(2) Enhancing capacity and standards for Rx fire on private lands

- Liability protections
- Authorizations (who can: write a burn plan, approve a burn plan, boss a burn)
- Burn education programs and workshops
- Determining the 'market', cost-share/incentives

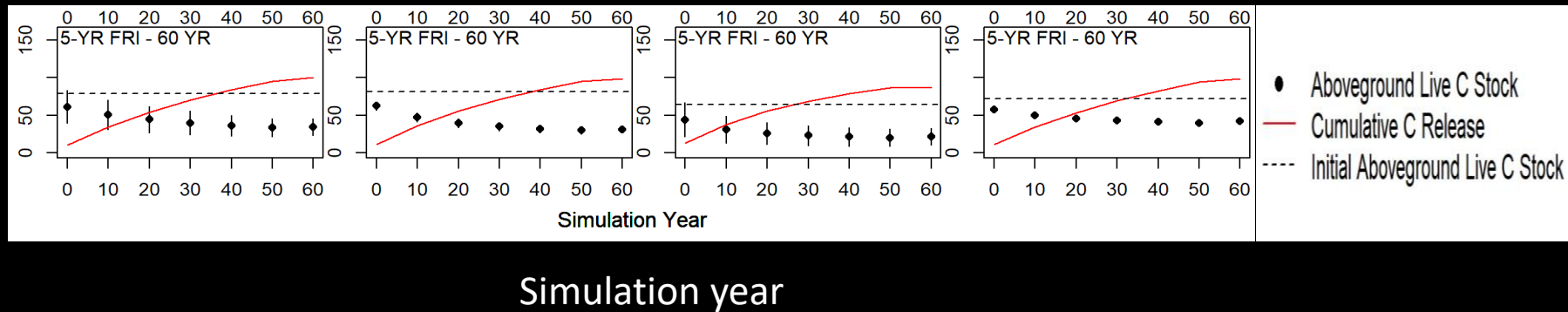


(3) Recognize tradeoffs among management goals (e.g., Habitat restoration vs. Carbon stock)

Basal Area %/m²/ha

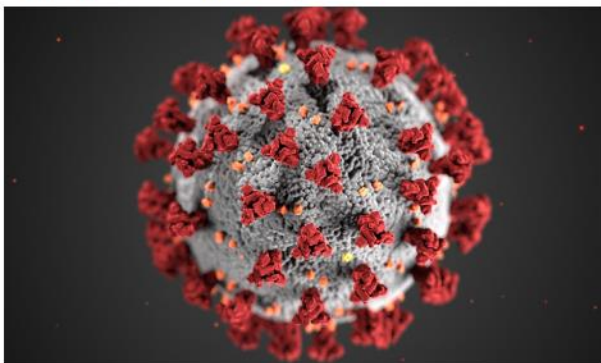


Carbon Mg/ha



(4) Smoke, Safety, and COVID-19

Wildfires & COVID-19



People working on wildfires need to be vigilant about the spread of infectious diseases like coronaviruses (shown above). The National Wildfire Coordinating Group released [new guidance](#) so managers and firefighters can plan for, recognize, and respond to outbreaks if they arise. (CDC/Alissa Eckert, MS; Dan Higgins, MAMS)

The Department of the Interior will continue to fulfill its firefighting mission during the COVID-19 pandemic. To ensure that our ability to respond to wildfires over the coming months remains effective, we're working with [our partners](#) to:

Hire the firefighters we need.

Temporary guidance has been established so that onboarding of new and returning employees continues safely and efficiently. [Medical standards](#) for firefighters have been updated in light of COVID-19.

Safeguard employees & communities.

Firefighters should follow the recommendations provided by [coronavirus.gov](#) to reduce the spread of illness. The Department of the Interior has established an intranet site to share information about COVID-19 with its employees.

Prepare for outbreaks at incidents.

People working on incidents like wildfires need to be vigilant about the spread of infectious disease. The National Wildfire Coordinating Group released new [Infectious Disease Guidance](#) for wildland fires so that incident management teams and firefighters can plan for, recognize, and respond to outbreaks if they arise. A special interagency team of medical and public health experts has been established to review and synthesize COVID-19 guidelines used in wildfire operations.

Adapt wildfire response plans.

To ensure the highest degree of readiness, the National Multi-Agency Coordinating Group assigned three Area Command Teams to work with partners at all levels in the fire community to develop [regional guidance and best practices](#) for wildfire response during the COVID-19 pandemic.

Continue our work reducing wildfire risk.

Reducing wildfire risk through [fuels management](#) remains an essential activity for the Department of the Interior. We're also taking actions to reduce the impact of smoke from prescribed fires on individuals and communities, recognizing its potential effect on those who have contracted COVID-19 or who may be at risk.

Monitor new developments.

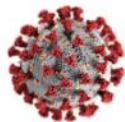
The Department of the Interior Wildland Fire Program will continue to assess potential risks to firefighters and communities as the response to COVID-19 continues.

Read the latest from the [Coronavirus Task Force](#), the Center for Disease Control's [COVID-19 health information](#), and the [U.S. Government response to Coronavirus](#).

<https://www.doi.gov/wildlandfire/wildfires-covid-19>



Fuels Management



Coronavirus Task Force



Meeting the challenges of COVID-19

THE CONVERSATION

Academics right, journalists left

COVID-19 Arts & Culture Economy & Business Education Environment & Energy Ethics & Religion Health Politics & Society Science & Technology

Wildfire smoke worsens coronavirus risk, putting firefighters in extra danger

April 16, 2020 8:11am EDT

New research shows that exposure to air pollution, including wildfire smoke, can make coronavirus particularly deadly. (AP Photo/David J. Phillip)

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As summer approaches, two forces of nature are on a collision course, and wildland firefighters will be caught in the middle.

New research suggests that the smoke firefighters breathe on the front lines of wildfires is putting them at greater risk from the new coronavirus, with potentially lethal effects.

At the same time, firefighting conditions make precautions such as social distancing and hand-washing difficult, increasing the chance that, once the virus enters a fire camp, it could quickly spread.

As an environmental toxicologist, I have spent the last decade expanding our understanding of how wood smoke exposure impacts human health. Much of my current research is focused on protecting the long-term health of wildland firefighters and the communities they serve.

Author

Luke Mendenhall
Assistant Professor of Community and Environmental Health, Boise State University

Disclosure statement

Luke Mendenhall does not work for, consult, own shares in or receive funding from any company or organization that would benefit from this article, and has disclosed no relevant affiliations beyond their academic appointment.

Partner



National Wildfire Coordinating Group

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Infectious Disease Guidance for Wildland Fire Incidents, Emergency Medical Committee

Wildland fire incident management activities create an ideal environment for the transmission of infectious diseases: high-density living and working conditions, lack of access to and use of soap and sanitizers, and a transient workforce. These and other environmental and occupational factors (e.g., smoke, heat, plants, insects, fungus, fatigue, and physically demanding work) can increase the likelihood of disease transmission. In some situations, the number of symptomatic fire personnel and suspected cases can increase rapidly, resulting in an infectious disease outbreak on the incident. An outbreak is the occurrence of more cases than would normally be expected in a specific place or among a group of people over a given time period. This guidance is intended to enable Incident Management Teams (IMTs) to effectively prevent, plan for, recognize, and respond to infectious disease issues during wildland fire operations.

This guidance provides National Wildfire Coordinating Group (NWCG) recommendations for infectious disease prevention, planning, identification, and response during wildland fire incident management activities. It does not supersede the guidance or direction of local health authorities but supplements existing direction from them.

The NWCG recommends:

- Follow Centers for Disease Control and Prevention guidance.
- Use the planning principles stated in the Health and Human Services EMS Infectious Disease Playbook.
- Follow this supplemental guidance from the NWCG Emergency Medical Committee (EMC).

⇒ Background

⇒ Pre-Planning and Preparing

⇒ Prevention

⇒ Key Control Strategies

⇒ Managing the Suspected Outbreak

⇒ Managing the Confirmed Outbreak

⇒ Special Considerations

⇒ Resources

This guidance was developed by the NWCG Emergency Medical Committee (EMC). Comments, questions, and

Fire and COVID-19

- What are the best strategies for reducing infectious disease spread in fire fighting communities?
- Can management objectives be met with reduced capacity (funds, personnel)?
- Should fuels reduction work be reduced around communities at risk (e.g., elderly communities)?
- Will attitudes toward Rx fire change in light of COVID-19 smoke risk?
- Do communities understand how managers manage smoke?

Conclusions

- 1) Long-term, extensive ecological monitoring necessary to ensure ecological goals are met in mid-Atlantic ecosystems
- 2) Develop multi-level “landscape burning” strategy (individual values + community + agency)
- 3) Continued monitoring of community acceptance (attitudes can shift, e.g. during a pandemic!)
- 4) Enhance manager capacity and flexibility is needed to meet ecological objectives, maintain community relationships, expand to private land areas, and adapt to changing socio-environmental landscapes



Thank you

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Firescapes in the mid-Atlantic: mismatches between social perceptions and prescribed fire use

Center for Landscape Dynamics, Penn State
Institutes of Energy and Environment, Penn State

@EricaSmithwick
smithwick@psu.edu

@NorthAtlFireSci

- Pennsylvania Bureau of Forestry
- Pennsylvania Game Commission
- New Jersey Forest Fire Service
- North Atlantic Fire Science Exchange